



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/541,853	04/03/2000	Paul Andrew Miller	1322/9	4243

25297 7590 07/15/2004

JENKINS & WILSON, PA  
3100 TOWER BLVD  
SUITE 1400  
DURHAM, NC 27707

EXAMINER

LEE, TIMOTHY L

ART UNIT PAPER NUMBER

2662

DATE MAILED: 07/15/2004

21

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/541,853

Applicant(s)

MILLER ET AL.

Examiner

Timothy Lee

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 and 36-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 36-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 17-19.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-31 and 36-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry et al. (US 5,923,659) in view of Longfield et al. (US 5,898,667).

3. Regarding claims 1, 11, 21, 25, 39, 42, and 43, Curry et al. discloses a system and method for controlling two or more telecommunications networks which are themselves capable of exercising a form of common channel signaling network control. In Fig. 12, Curry et al. discloses the receiving of an SS7 packet message at an STP from an SSP. Inherently, if the SSP is sending an SS7 packet message to the STP over link, the link itself must be a type of SS7 link (over an SS7 signaling link). When the STP recognizes that a foreign prefix exists, it directs the packet to the Internet Module, where the Module performs the necessary address determination and adds the appropriate addressing and instructional overhead to encapsulate the packet in one or more TCP/IP packets, and transmits the packet over the Internet. See Fig. 12, and col. 21, lines 12-50. It is inherent that if you are encapsulating the packets into TCP/IP packets then you will be sending the packets over a variable bandwidth IP capable link to a node that is IP capable—link 134 in Fig. 12 is an IP capable link (connecting a second interface of the edge device to an IP-capable node using a variable bandwidth signaling link).

Art Unit: 2662

4. Curry et al. does not expressly disclose two elements: 1) where STP connects to a plurality of SS7 signaling links and multiplexes these messages, and 2) where the interface for connecting the plurality of SPs resides on the same edge device as the interface for multiplexing to the variable-bandwidth signaling link.

5. Regarding 1), Longfield et al. discloses where an STP includes a plurality of interface units or link-interface units. See col. 4, lines 39-44. Multiple interface units and racks of interface units may be used to expand the number of connections possible with the STP. See col. 4, lines 63-65. Moreover, Longfield et al. discloses that the STP is a telecommunications switch that receives signals from other network elements, *multiplexes*, and switches the signals. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the teachings from Longfield et al. in the STP of Curry et al. so that multiple connections could be connected to the STP. One would have been motivated to do this because more than one caller could then take advantage of sending signaling messages over the Internet.

6. Regarding 2), it would have been obvious to a person of ordinary skill in the art at the time of the invention in Curry et al. to combine the functions of the Internet Module with the functions of the signal transfer point into one device. One would have been motivated to do this because it would streamline the setup, thus making the system more compact and reduce the number of components needed to make the system.

7. Regarding claim 11 more specifically, the network shown in Fig. 12 is somewhat symmetrical, where the STP/Internet module combination on the left side is like the STP/Internet module combination on the right side of the network. Like STP 118, STP 148 is also connected to two SSPs, 142 and 146 (a first interface of a second edge device

Art Unit: 2662

to third and fourth SPs). As mentioned previously, the Internet modules are connected by TCP/IP links through the Internet, which is a variable bandwidth link.

8. Regarding claim 2, as mentioned previously, the combination of the STP and the Internet Module from Curry et al. is responsible for encapsulating the messages originating from the SPs so that they can be transferred over the Internet.

9. Regarding claims 3, 12, and 17, as mentioned previously, Curry et al. discloses that the messages are encapsulated into TCP/IP packets so that they can be transferred over TCP/IP links.

10. Regarding claims 4 and 20, Curry et al. discloses where each SS7 message backward sequence number (adding an application level sequence number). See col. 15, lines 27-34.

11. Regarding claim 5, it is readily known in the art that the transport protocol in SS7 is MTP. See col. 5, lines 33-47 of Longfield et al..

12. Regarding claims 6, 7, 8, 15, 22 and 23, Curry et al. discloses that all messages come to the STP and only the ones where the translation table recognizes as a foreign prefix are directed towards the Internet (determining messages are directed to locally-connected nodes, routing the messages to the locally-connected nodes over one of the SS7 links). See col. 21, lines 21-24. Extracting information from the prefix to decide the packet's destination is the same idea as extracting a destination point code and comparing to values stored in a routing table.

13. Regarding claim 9, from Fig. 12, the Server Internet Module 140 on the other side of the network in Curry et al. can be considered an IP capable node that is a SS7/IP gateway because it bridges the SS7 network and the IP network.

Art Unit: 2662

14. Regarding claims 10, 24, 31, and 37, as mentioned previously, the plurality of SPs in Curry et al. are specifically SSPs.

15. Regarding claims 13 and 14, as mentioned previously, the SPs of Curry et al. are connected to the edge device through SS7 links.

16. Regarding claim 16, it is inherent that the interface between the STP and the SSPs will work on the layer 2 and layer 3 processes of SS7.

17. Regarding claim 18, the combination of the STP and the Internet Module in Curry et al. forwards the messages the edge of the Internet Module, which also acts as an SS7/IP gateway.

18. Regarding claim 19, neither Curry et al. nor Longfield et al. expressly discloses encapsulating the SS7 messages first into transport adaptor layer interface packets before encapsulating those to make them into IP datagrams; however, it would have been obvious to add this extra step into the encapsulation process of Curry et al.. One would have been motivated to do this because the encapsulation step could be broken into two steps, and thus the encapsulation mechanisms wouldn't have to be as complicated as it would be if it existed in one step.

19. Regarding claims 26, 27, and 28, neither Curry et al. nor Longfield et al. expressly discloses filtering out LSSUs and FISUs received over the SS7 links, but it would have been obvious to filter them. One would have been motivated to do this because sending them along the TCP/IP links would be a waste of resources since they are only needed to determine the status of the SS7 links.

20. Regarding claim 29, as mentioned previously, Curry et al. discloses that the messages with outbound destinations will be passed onto the network.

Art Unit: 2662

21. Regarding claim 30, neither Curry et al. nor Lonfield et al. expressly discloses where the SS7 signals don't have point codes, but it would be obvious to have some of the signal units that do not have point codes. One would have been motivated to receive these units because sometimes there is a need to provide for recognition of unknown coded packets and the system can figure out where to send them.

22. Regarding claims 36, 38, 40, and 44, Curry et al. discloses where the SSP comprises an end office. See Fig. 12, where SSP 102 contains an end office 104.

### ***Response to Arguments***

23. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

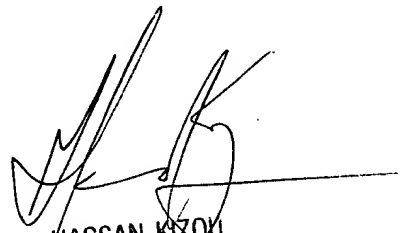
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy Lee whose telephone number is (703)305-7349. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703)305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2662

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLL  
Timothy Lee  
July 7, 2004



HASSAN KIZOU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600